

METHOD AND APPARATUS FOR COOLING WITH
A PHASE CHANGE MATERIAL AND HEAT PIPES

ABSTRACT OF THE DISCLOSURE

A cooling apparatus (10) includes a housing defined by two aluminum parts (12, 13) which are brazed to each other. A plurality of sector-shaped recesses (21-28) are provided within the housing, and collectively define a chamber having a plurality of ribs (41-48) extending therethrough. Each recess contains a sector-shaped piece of porous material (17, 18), which is brazed to surfaces of the housing parts. The remaining space within the chamber is filled with a phase change material. Each of the ribs has therein a respective radially extending opening (101-108) which contains a heat pipe (141). Expansion accumulators (151) are mounted on the housing, and communicate with the chamber therein, in order to accommodate expansion of the phase change material within the chamber as the phase change material is heated.

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